

CCACGCGTCCGCGCGGGAGCTGCTTGGAGGCTCGGCGGCCGGGAGGAGGCCGGGGCCACGCTTCTTGGAA
GCTACTGAGTGACTTCTTTGAAGAACCATGAAGTCACACTATATTGTGCTAGCTCTAGCCTCCCTGACGT
TCCTGCTGTGTCTCCCCGTGTCCCAGAGCTGTAACAAAGCACTCTGTGCCAGCGATGTGAGCAAATGCCT
CATTCAAGGAGCTCTGCCAGTGCCGGCCTGGAGAAGGGAACCTGCCCCCTGCTGTAAGGAGTGCATGCTGTGC
CTCGGGGCCCTGTGGGACGAGTGCTGCGACTGTGTGCGGTATGTGCAACCCCTCGGAATTACAGCGACACCC
CGCCACATCCAAGAGCACCGTGGAGGAGCTGCACGAGCCCATTCCGTCCCTGTTTCAGGGCGCTGACGGA
GGGCGACACCCAGCTGAACTGGAACATCGTCTCCTTCCCTGTGGCAGAGGAGCTGTACACCATGAAAC
CTAGTCTCCTTCTAGAACTGTGAACCAGCTGCACCACCAAACGTGTCTGTTCCCAGCAACAATGTCC
ACGCCCCCTTCCCCAGCGACAAAGAGCGCATGTGCACAGTGGTTTACTTTGATGACTGCATGTCCATCCA
CCAGTGTAAGATATCCTGCGAATCCATGGGTGCATCCAAGTATCGCTGGTTTACAAACGCCTGCTGCGAG
TGCATCGGTCCAGAGTGCATTGACTATGGGAGTAAACTGTCAAGTGTATGAACTGCATGTTTTAAAGAG
GGGGAAGAAATGCAAACCAAAGCAAGAACGCTGACGATGCCGTTGACACTCCTACCTTGCAGGATGTCCC
CACAGAGTCCACTGGACCAGCTTGTACAAGGGTGAAACCTTTCTGCGTCACCTTTCTGCTTTTGCAGAGC
CATGACAGCAGCTGCCTTACAGCGTGATTTAGCAGACAGACCTGACAGGTGTGTATGTGACAGGCAGCC
ATCAGGGTGGCCTAGCACATTTGTGGGTGCTGATGTTGTATTGCACTGTCAAAGACTGACCAGTCCCTGAT
AGGGCTGGAAAGAGGAAAGGGGTGTGGGAAGGTGACTTTCTTAGCTCTCCCGTAGCAGCACACTGTCATA
GTGTCTCAGTGTATATTGCTGTGAAGAGACACCACAACCAAGGCAGCTTATGAAGAAAGCCCTTAATTA
GGGCTCGCTTTACAGTTCGAGGTTACTTCTTGGTCTGTCGTTGGTGGGGATGAGGCAGTAGGTAGCAGGCA
TGGTGTGAGCAGTAGCTGAATGTTGGTTCACAAACTTAGCACCTCGAGTCATGATAGAAACACCATCC
AGGCCTTGAAGCCCAACACGTAGCAACACCCTTGCCAAAGCAGGATCAAGGCTCTGTGAGCGTCCCAGG
ATGCAGTTGGGCAAGTTCTTGAGTGAAATTCCTATACATACTAACTCTGCAATTTTGCTTCTATAGTTCC
TCTTCTTGTTAACTATATGTCCAGAACCATTTTCAAGATATGG
GTTTTTGTGAATAAAAAAATAAAAAAGGCCTGGTCTGCATAGATTGGGCAAGTTCCCTTGCAGCCACAGG
CTAACAGTAAAGACTTTCTATTTGGCTTTAGGAGTATCCAAGGGGTGGTCTCTCGTGAGAGTACCTCGCA
ACAGCAGCAGATGGTGTGGAGGCTTGGCCTGCTGTGGGCTTTTGAACCTTAAAGTCCACCCCCAGTGA
CACGCTCCTCCAATAACACCACACCTCCTAATCCTTTCTAAGTAGTCCCTCAACTGGGAACCAAGCATT
CAGATATACGAGCCCAAAAGGCCATTCTCGTTCAAACCACCACATGTAATAAAATATATGCCACGTCAA
AAAAAAAAAAAAAAAAAAAA (SEQ ID NO:1)

MKSHYIVLALASLTFLCLPVSQSCNKALCASDVSKCLIQELCQCRPGEGNCPCC
KECMLCLGALWDECCDCVGM CNPRNYS DTPPTSKSTVEELHEPIPSLFRALTEG
DTQLNWNIVSFPVAEELSHHENLVSFLETVNQLHHQNVSVPSNNVHAPFPSDKE
RMCTVVYFDDCMSIHQCKISCESMGASKYRWFHNACCECIGPECIDYGSKTVKC
MNCMF (SEQ ID NO:2)

FIG. 1

red underlined = deleted in targeting construct

green = sequence flanking Neo insert in targeting construct

CCACGCGTCCGCGCGGGAGCTGCTTGGAGGCTCGGCGGCCGGGAGGAGGCCGGGGCCACG
CTTCTTGAAGCTACTGAGTGACTTCTTTGAAGAACCATGAAGTCACACTATATTGTGCT
AGCTCTAGCCTCCCTGACGTTCCCTGCTGTGTCTCCCGTGTCCTCAGAGCTGTAACAAAGC
ACTCTGTGCCAGCGATGTGAGCAAATGCCCTCATTCAGGAGCTCTGCCAGTGCCGGCCTGG
AGAAGGGAAC TGCCCCTGCTGTAAGGAGTGCATGCTGTGCCTCGGGGCCCTGTGGGACGA
GTGCTGCGACTGTGTCTGGTATGTGCAACCCTCGGAATTACAGCGACACCCCGCCACATC
CAAGAGCACCGTGGAGGAGCTGCACGAGCCCATTCGCTCCCTGTTCAGGGCGCTGACGGA
GGGCGACACCCAGCTGAAC TGGAACATCGTCTCCTTCCCTGTGGCAGAGGAGCTGTCA
CCATGAAAACCTAGTCTCCTTCCCTAGAAAACCTGTGAACCAGCTGCACCACCAAAACGTGTC
TGTTCCCAGCAACAATGTCCACGCCCCCTTCCCCAGCGACAAAG [AGCGCATGTGCACAGT
GGTTTACTTTGATGACTGCATGTCCATCCACCAGTGTA] AGATATCCTGCGAATCCATGGG
TGCATCCAAGTATCGCTGGTTTTCAACGCCCTGCTGCGAGTGCATCG [GTCCAGAGTGCAT
TGACTATGGGAGTAAACTGTCAAGTGTATGAACTGCATGTTTTAAAGAGGGGGAAGAAA
TGCAAACCAAGCA] AGAACGCTGACGATGCCGTGACACTCCTACCTTGCCAGGATGTCCC
CACAGAGTCCACTGGACCAGCTTGTACAAGGGTGAAACCTTTCTGCGTCACCTTTCTGCT
TTTGCAGAGCCATGACAGCAGCTGCCCTTACAGCGTGATTTAGCAGACAGACCTGACAGGT
GTGTCATGTGACAGGCAGCCATCAGGGTGGCCTAGCACATTTGTGGGTGCTGATGTTGTA
TTGCACTGTCAAAGACTGACCAGTCCCTGATAGGGCTGGAAAAGAGGAAAGGGGTGTGGGAA
GGTGACTTTCTTAGCTCTCCCGTAGCAGCACACTGTCATAGTGTCTCAGTGTCTATATTGC
TGTGAAGAGACACCACAACCAAGGCAGCTTATGAAGAAAGCCCTTAATTAGGGCTCGCTT
TACAGTTCCGAGGTACTTTCCTGGTCTGTCGTTGGTGGGGATGAGGCAGTAGGTAGCAGGCA
TGGTCTGAGGAGCAGTAGCTGAATGTTGGTTCACAACTTAGCACCTCGAGTCATGATAGA
AACACCATCCAGGCCTTGAAGCCCAACACGTAGCAACACCACTTGCCAAAGCAGGATCAA
GGCTCTGTGACGCTCCCAGGATGCAGTTGGGCAAGTTCTTGAGTGAAATTCCTATACATA
CTAACTCTGCAATTTTGCTTCTATAGTTCCCTCTTCTGTGTTAACTATATGTCCAGAACCAT
TTCAGAATATGGGTTTTTGTGAATAAAAAAATAAAAAAGGCCTGGTCTGCATAGATTGGG
CAAGTTCCCTTGCAGCCACAGGCTAACAGTAAAGACTTTCTATTTGGCTTTAGGAGTATC
CAAGGGGTGGTCTCTCGTGAGAGTACCTCGCAACAGCAGCAGATGGTGTGAGGCTTGG
CCTGCTGTGGGCTTTTGAACCTTAAAGTCCACCCCAAGTGACACGCCTCCTCCAATAAC
ACCAACCTCCTAATCCTTTCTAAGTAGTCCCTCAACTGGGAACCAAGCATTTCAGATATA
CGAGCCCAAAAGGCCATTCTCGTTCAAACCACCATGTAATAAAATATATGCCACGTC
AAAAAAAAAAAAAAAAAAAA (SEQ ID NO:1)

FIG. 2A

Gene Sequence Structure *

Size of full-length
cDNA: 1879 bp

639 bp

Sequence Deleted

707 bp

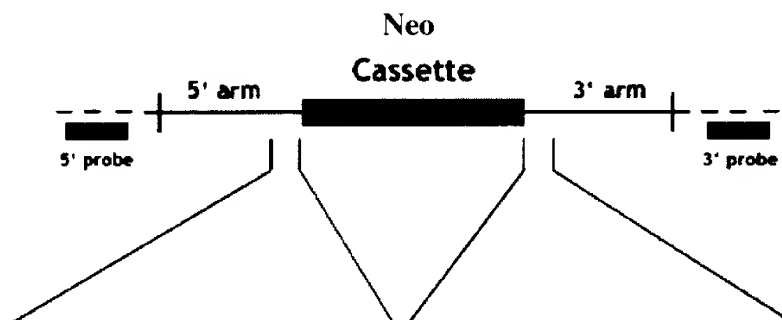
Targeting Vector* (genomic sequence)

Construct Number: 203

Arm Length:

5': 1.9 kb

3': 3.6 kb



5' >AACAAATGAAGATCTTTTGTC
CCTCGTTTTTGTCTGTGCTGATG
AGCAGTAAGAGGGCTAGAAAGTAA
CTGCAGGTATTCTCTGAGCAAGCG
AGCGAGTGCCCGAGCTCTTCCTGC
CTGTACTGAAATGTCCCTTTGCAT
TTCAGAGCGCATGTGCACAGTGGT
TTACTTTGATGACTGCATGTCCAT
CCACCAGTGTA<3' (SEQ ID
NO: 3)

5' >GTCCAGAGTGCATTGACTATG
GGAGTAAACTGTCAAGTGTATGA
ACTGCATGTTTTAAAGAGGGGAA
GAAATGCAAACCAAAGCAGTAAGT
CATGAAGTGTGCAGAAATCTTGGT
TCTGGTATGCTAGGAGTGTGTTAA
GTTATATGATTGTAAGTGTGCTTT
TTATATCTGGTGCCTATTAGTGTA
GGTCTTTTCCA<3' (SEQ ID
NO: 4)

————— Targeting Vector
----- Endogenous Locus

* Not drawn to scale

FIG. 2B